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STRATEGIC COMMUNICATIONS AND THE SPECTRUM OF CONFLICT

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(Essay)

Strategic Communications and the Spectrum of Conflict

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SUMMARY

The chain of events since World War II has caused the rapid development of a worldwide military communications capability designed to meet specific requirements as they have occurred. This system has been evolved specifically to support a national policy of deterrence.

Recently the strategic policy was expanded to include deterrence plus containment of revolutionary and subversive activities. The rapid reassessment of capabilities resulting from this change in policy brought to light certain weaknesses in the supporting communications systems.

A spectrum of conflict limited to five levels is defined. Only three of the levels are pertinent to the design of a strategic communications system. With the continued growth and increasingly closer relationship between military and political requirements, it has become apparent that there must be a single worldwide communications system designed to meet combined requirements.

Some of the fundamentals which must be considered before implementing such a combined system have been broadly analyzed and conclusions have been drawn as to certain specific problems which must be solved before system implementation.

STRATEGIC COMMUNICATIONS AND THE SPECTRUM OF CONFLICT

The destruction of Hiroshima and Nagasaki near the end of World War II introduced a new element in world military and political strategies: the nuclear weapon changed the destruction potential and scope of possible future wars. Since then, new concepts in the conduct of military operations have dominated military thought, and there has been an irrevocable marriage of military and political strategy and tactics. This union of military and political planning, coupled with a revolution in technological development, has caused major changes in the concepts of and requirements for communications support of the resultant politico-military activities. Some thought about the situation gives rise to the question, "Does our planning give adequate consideration to communications capabilities and limitations through the spectrum of conflict and, if not, what can we do to improve the situation?"

This article has been written as a broad overview of the potential spectrum of conflict and its communications implications; it points out that, while much has been done to adjust communications capabilities to the altered world situation, there is still some room for improvement.

The Spectrum of Conflict

It has been fashionable for several years to refer to the varying degrees of world strife taken as a whole as the spectrum of

conflict; indeed, this is a very useful way to consider tension patterns as an aid to planning. As can be imagined from the use of the word "spectrum," the concept is multidimensional in nature and covers the entire range from idealized peaceful competition to total world annihilation. For the purpose of this article, a simplified spectrum limited to five levels has been employed. Special notice should be taken that at the lower end of the scale, the spectrum can be considered as applying either to limited areas or to the world as a whole, but, as the tempo of conflict increases, larger and larger portions of the world are forcibly involved.

Beginning at the lower end of the spectrum, there is an ideal level characterized by peaceful competition in trade, culture, and scientific development. War, even on a limited scale, is not present at this level. Since man has never been able to achieve this level except very locally for short periods of time, and since its achievement on a worldwide scale appears unlikely in the near future, this level is not considered as a factor which should influence the design and implementation of strategic communication systems.

The first step up the spectral ladder brings one to a level of tension. Strife, both national and international, is widespread. This strife may be limited to economic, psychological, or political struggles, or it may involve armed conflict for establishing, regaining, or maintaining control of areas threatened by guerrilla action, revolution, subversion, or other tactics aimed at internal takeover of one or more governments. The Berlin and Laotian crises

of 1959 represent different types of strife within this spectral level. Crises resulting from low intensity actions at this level can easily escalate to the next level.

The next level involves conventional, or mid-intensity, warfare, which may be defined as fighting intended to accomplish limited objectives under definitive policy limitations. This level and type of conflict is a product of the world situation since World War II and is precarious, to say the least; yet it seems to become more prevalent as time goes on. The limited objectives are normally established for political reasons and frequently are not compatible with objectives more desirable from a military point of view. For example, they may require containment of armed conflict within militarily indefensible frontiers, or they may allow an enemy to mount operations from within territory which for political reasons must remain inviolate to friendly military penetration. The emergence of many new nations since World War II, their struggles to achieve stability, the aggressive attempts of Communist nations to spread communism, and the resistance to aggression by the Free World have elevated situations to this level of the spectrum many times. There is a strong probability that this trend will continue for many years, until the Communist nations have reached a level of political maturity which does not demand world acceptance of Communist ideologies, and until the new nations (the "have-nots") have become viable states with a reasonable degree of political and economic stability. The Vietnamese conflict now in progress typifies the struggles at this

level of the spectrum. It is most important to the future of the world that conflicts be contained at least to this level.

High intensity, or nuclear, warfare involves the application of the most modern military technology in maneuver, firepower, intelligence and command. It is at this level that military objectives must take precedence over political objectives; hopefully, we will be able to maintain a sufficiently deterrent posture to avoid this level, but we must be ready to fight should deterrence fail. The dangerous step upward from mid- to high-intensity warfare would undoubtedly bring the Free and Communist Worlds to a major confrontation, causing the devastation of much of the developed world, the death of a large portion of the world's population, and a complete breakdown of the world's economic structure and power balance.

The final step in the spectrum--beyond comprehension--involves total destruction of the human race. For obvious reasons, it bears no relevance to the matter under consideration.

Evolution of Strategy

With the creation of a huge arsenal of nuclear weapons in the United States and an opposing one in the Soviet Union, our national policies included a strategy of deterrence--as long as the power balance was such that we could suffer less in a nuclear exchange, or could better recover from one, we were confident that we would not be attacked. National strategy did not include mid-intensity warfare, at least not as involving the United States, and our military capabilities

were shaped around this policy of mutual deterrence. Our armed forces were geared primarily to prevention of high intensity warfare or, if it should occur, to emerging triumphant after a nuclear battle of major proportions. This trend was interrupted temporarily in 1950 by the Korean War, but was resumed after 1953.

It would appear that the lessons learned by the Communists in China and Korea were sufficiently impressive to them that they instigated a major foreign policy change on the part of the Soviet Union. While the nuclear stalemate seemed to preclude further appreciable Communist expansion by overt means, local revolutions within the many emerging nations offered fertile ground for sowing the seeds of communism. In a public announcement in 1961, Khrushchev outlined Soviet support of these "wars of national liberation." In a special defense budget message to Congress in the same year,[1] President Kennedy countered with an announced change in United States policy. In part, he said:

> The strength and deployment of our forces should be sufficiently powerful and mobile to prevent the steady erosion of the Free World through limited wars; and it is this role that should constitute the primary mission of our overseas forces. Nonnuclear wars, and sublimited or guerrilla warfare have, since 1945, constituted the most active and constant threat to Free World security.

In addition, the President stated that "our defense posture must be flexible and determined" and "must be designed to reduce the danger of irrational or unpremeditated general war." This public recognition

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[1]John F. Kennedy, Special Message on Defense Budget, 28 Mar. 1961.

by the United States of the gravity of mid-intensity warfare to the security of the Free World marks the beginning of an era of nuclear deterrence plus containment of subversive and revolutionary activities. Careful and rapid reassessment of the joint capabilities of our armed forces was required so that an effective counterinsurgency and mid-intensity warfare proficiency could be established therein; at the same time, adequate forces for the maintenance of a posture of nuclear deterrence have had to be retained and improved as required.

This brief discussion of the strategic background affecting our worldwide communications requirements would not be complete without mention of Communist China. The Communists gained control of China through a "war of national liberation," or "people's war" in Communist China's terminology. More recently, they have been openly active in challenging the viability of "imperialist United States and its lackeys," and at the same time have increased their support of subversive and revolutionary activities in other countries of Asia, Africa, and Latin America.

Another element of Chinese influence on the world is her militant attitude toward the spread of Communist influence. Unlike the current Soviet attitude of peaceful coexistence of major powers (even though openly supporting "wars of national liberation"), Chinese leaders do not believe that their ideologies can be triumphant without aggressive revolutionary activity, preferably under direction of Red China. They continue to exploit every opportunity to foment violence which is damaging to the Free World position, and are simultaneously developing

their own nuclear capability. This militant attitude and the Chinese intent to take over Communist leadership have caused a serious rift between China and the Soviet Union. The permanence of the rift and its eventual impact are currently favorite discussion topics of political and military planners.

In summary, the world situation today leads one to the conclusion that limited warfare is here to stay for a long time and that the nuclear balance of power, heretofore bipolar, may become multipolar within the next decade.

Evolution of Integrated Concepts

The growing worldwide commitments of the United States and the maintenance of an effective deterrent posture have required wide dispersal of armed forces and nuclear weapons. In the fifties, aside from Korea, most effort was concentrated on strengthening NATO, but, with policy changes regarding the importance of limited warfare to national security, no amount of planning or even speculation can postulate the location or scope of our next commitment. Certainly some areas are more likely trouble spots than others, but our extrasensory perception is sufficiently inaccurate that we must be ready to deploy our forces wherever in the world they may be required, in adequate quantities and in a sufficiently timely fashion to assure the accomplishment of our objectives.

How have these changed circumstances affected our communications planning and systems implementation? Have sufficient effort and

resources been devoted to the task, and where may we find room for improvement?

Since men first engaged other men in organized combat, good communications have been essential to victory; this statement should come as no surprise to anyone, but the sophistication of nuclear deterrence and warfare coupled with our worldwide commitments have resulted in development, in the minds of our planners, of a new consciousness of the importance of communications. In recent years, they have evolved a link-up in the planning stages of command and communications functions, commonly called "command, control and communications," or C^3 for short. There are two interrelated aspects of C^3 which need to be reviewed at this point: (1) the development of our present military worldwide communications system; and (2) the impact of closer political and military relationships on the further improvement of the system.

At the end of World War II, our worldwide military communications were primarily provided by a number of point-to-point links of small capacity, with very little capability for long-range voice conversations. These links were installed as required when it was necessary to communicate between two points, were not designed for interconnection, and there was little attempt or capability to create a worldwide system able to handle large volumes of traffic.

As the nuclear race increased its pace, it became necessary to have more and better communications between and among a much larger number of places. In addition, the threat of nuclear attack, both at

home and overseas, required development of new concepts of systems designed to provide essential communications even under conditions of high intensity war. Spurred by the rapid increase of requirements in wartime (WW II), progress in technological communications moved rapidly; many new capabilities for processing much greater volumes of all types of communications locally and worldwide were developed, which formerly had been far beyond the "state of the art."

The tremendous change in the nature of prospective warfare and the tense nature of the world political situation increased vastly the volumes of information needed to be originated, stored, transmitted, received, processed, analyzed and displayed. Developmental effort was therefore concentrated on improving the speed of communication, automation, and new types of terminal and transmission hardware. In addition, the nature of the threat focused considerable attention on the vulnerability of command and communications centers. The upshot of this trend, which has slowed down but has still not stopped, was the investment of huge numbers of dollars in hardware without adequate consideration of the eventual requirements of a worldwide system. Each piece of hardware was designed to perform a specific purpose, and only coincidentally or occasionally was an overall requirement for compatibility thoroughly considered. The Army, Navy, and Air Force all proceeded along parallel paths; there was even much competition and duplication within the services. These varied but similar activities created what became known as the "interface problem."

Communication is the process of origination, transmission, processing, reception, comprehension, and storage of information; it is accomplished by a combination of procedures and equipment. All parts of this combination are interrelated and must be considered if optimum design is to be achieved. The equipment includes people, typewriters, teletypewriters, telephones, facsimile and television devices, computers and other ADP equipment, cryptographic devices, and the communications systems through which the information is processed. Each device in the communications chain speaks a language; the space between the devices is the interface. If two adjacent devices speak different languages, there must be an interpreter (the familiar "black box"), which usually is quite expensive. The parallel development of many systems and facilities has resulted in procurement of a large amount of incompatible equipment. As attempts are made to build a worldwide system utilizing all this expensive hardware, the interface problem becomes apparent.

The gravity of the interface problem, growing costs of duplicatory communications facilities, and the near exhaustion of irreplaceable communications resources (primarily the radio frequency spectrum) caused the Secretary of Defense in 1961 to form the Defense Communications Agency (DCA), whose mission was to bring about the combination of the strategic communications resources of the Department of Defense (DOD) into a single, common-user, worldwide Defense Communications System (DCS). This system was to be designed to meet the combined worldwide requirements of the armed forces and

other agencies of the DOD. Currently being implemented are the Automatic Voice Network (AUTOVON) and the Automatic Digital Network (AUTODIN). These two networks are being designed to make best use of available transmission systems, are to be functionally interrelated, and, when fully operational, will be worldwide in scope. AUTOVON will enable users to employ direct dialing techniques worldwide, and higher precedence calls will preempt lower precedence calls if necessary. AUTODIN will enable users to file large volumes of message and data traffic with a switching center, which will automatically process this data to its addressee at high speed, and in the most expeditious manner commensurate with precedence and the maximum utilization of available circuits. Under development is a secure voice network which will be integrated with these two systems; together, these three networks will constitute the bulk of the DCS.

Since World War II, over 170 million people of nongoverning territories in the world have gained independence; over forty formerly dependent territories have become sovereign states, and more will achieve independence in the near future. Establishment of a new world balance of power has been a continuously dynamic problem over these years and will grow even more demanding during the forthcoming years; the struggle between the Communist and Free Worlds for membership of these countries in their respective communities has further expanded communication requirements. This expansion, added to that required by the maintenance of a deterrent posture, applies to both the military and civilian agencies of government. These

civilian agencies have had to develop communications capabilities of their own, often competing for resources with the military, and frequently duplicating systems where one could have served several agencies. In recognition of the common need for worldwide government communications systems and the difficulty of providing several such systems, in 1963 President Kennedy directed that most of these systems, including the DCS, be combined into a National Communications System (NCS). He designated the Secretary of Defense as the executive agent for implementation and management of the NCS; the Director, DCA, was designated its administrator. The NCS is in its infancy, and its progressive evolution is severely handicapped by the parochial interests of various agencies properly proud of their own previous communications efforts and reluctant to relinquish their control to the DOD.

Governmental communications, both civil and military, can be divided into two broad categories. The first is operational (command and control), and the second is administrative. The requirements of these agencies for the two types of traffic have much in common, but there is great debate over the relative importance of military versus civilian traffic, particularly during times of extreme national emergency. The evolving NCS must be designed to accommodate both civilian and military traffic under varying world conditions in such a manner that neither military nor civilian objectives are jeopardized by inadequate communications.

The NCS and the Spectrum of Conflict

In considering what should be the future configuration of the NCS, one should answer certain fundamental questions. Who will use the system? What kinds and quantities of traffic will they generate, and how is this traffic affected by varying world conditions? What traffic should take precedence over other traffic, and should relative precedence be changed under varying conditions? What facilities do we have today, and how must or can they be modified and augmented to meet anticipated requirements? Where do we draw the line between what is possible and what is feasible? The answers to most of these questions belong to the shades of grey rather than to the realm of black and white, but they must all be properly addressed before major changes are implemented.

The future NCS should meet most government military and civilian command, control, and administrative communication requirements at home and abroad; it should fulfill those requirements under conditions of low, mid-, and high intensity warfare. To design such a system on a reasonable basis, electrical communications must be kept to the minimum necessary to do the job, since transmission resources are, and will continue to be for some years, a bottleneck. In view of this desire to keep electrical traffic to a minimum, there are three fundamentals of information exchange to be considered. These fundamentals determine the amount of traffic required, and the way they are handled can mean the difference between acceptable and unacceptable traffic loads. These areas of consideration are, first, knowledge of what is

taking place; second, how much of the knowledge is known beforehand; and, finally, how much additional information must be exchanged to accomplish the desired objectives. These considerations apply to command and control, as well as to administrative matters.

It is extremely difficult, if not impossible, to define how little or how much of events yet to occur must be communicated to another location. Therefore, while appropriate action must be left to the judgment of responsible individuals, some knowledge of communications conservation should be a part of the basic education of all government personnel.

In the second area of consideration, one finds a fertile field for substantial reduction of electrical communication requirements; that is, where the amount of information known beforehand is concerned. Much of the traffic generated during periods of low and mid-intensity warfare is characteristically low precedence and high in volume. Using this type of traffic, every attempt should be made to preposition information which will be of great importance during critical situations so that it can be referred to by minimal information exchange during these periods. In addition, effort should be concentrated on putting this information in some form that can be moved by physical means rather than electrical, i.e., cards or magnetic tape; handling is then easy for both the originator and the addressee, but actual transmission, while possible electrically, may be better and even more expeditiously accomplished by messenger, mail, or air express.

In the third case, we must again rely on the good judgment of

individuals to determine how much information must be exchanged; this judgment also can be influenced advantageously by education. The education should include, among other things, emphasis on two basic factors. First, how quickly must new information be exchanged? If speed is not essential, then mail or routine electrical exchange are preferable. The most routine matter, however, may be handled most efficiently by telephone if no record is required of the exchange. Second, information exchange should be limited to that information actually required. Huge volumes of traffic, even in times of emergency, and especially by telephone, are initiated by curiosity rather than an actual need for information.

Some note must be taken of the differences between civilian and military traffic. Whereas in most cases it may be quite possible to meet the requirements for both kinds through common use of the same facilities, careful analysis may prove that the differences in requirements, the exigencies of the situations, economic considerations, and even political immiscibility of the requirements may make this sharing infeasible. It is not the intent here to delve into the intricacies of this problem or to offer an imaginative solution, but rather again to point to fundamentals which must be considered in arriving at a solution. The influence of the spectrum of conflict must be taken into consideration, as well as the differing attitudes of military and civilian leaders with regard to national security matters. Before even thinking about physical system integration, one must isolate the respective requirements, study their relative

similarities and dissimilarities, and then decide where physical union is most advantageous.

History shows us that communications traffic increases during times of crisis, when an unusual event of wide interest occurs, or on certain recurrent occasions (Mother's Day, for instance). Assuming that all types of traffic are curbed as much as possible by the methods already suggested, it is of particular interest to then survey trends of both military and civilian governmental traffic as we ascend through the spectrum of conflict. At the lower end, C^3 traffic volume and precedence are at a comparatively low level. Under these conditions, where little military C^3 traffic is actually affecting operations of strategic importance, it is likely that much of the high level political traffic should be accorded at least as high a precedence as the military, if not higher. On a worldwide basis, this is not necessarily true of civilian versus military administrative traffic, but with the available facilities and some reasonable negotiation, differences could probably be resolved quite equitably; this is particularly true within the United States, where differences are even smaller. It would seem, then, that under these conditions, an arrangement for facility sharing could be established with little difficulty. But will these same conditions prevail at other levels of escalation?

As we ascend to conditions associated with mid-intensity conflict, the picture begins to change. There are still high-level political matters whose importance probably equals or is greater than,

that of military matters; however, it is likely that these important matters no longer have the same degree of urgency as military command and control traffic, which probably is determining the outcome of a fast moving conflict situation. This difference is further aggravated by the growing trend toward centralization of both military and civilian control of worldwide operations. In addition, many military administrative matters, formerly of a fairly low priority, now have assumed a much more important role in the determination of a successful outcome in our worldwide operations. The pattern of interrelationship of military and civilian requirements can thus be seen to be dynamic rather than static as world conditions climb through the spectrum of conflict.

As we approach the ill-defined border between mid- and high intensity warfare, the United States may have become involved in several conflicts at widely scattered points in the world, and may even be in real danger of nuclear warfare. This scale of activity even further emphasizes differences between military and civilian requirements. Some military operations may occur where little if any civilian requirement exists. An adequate exchange of military traffic including command, control, and administrative, both at home and abroad, becomes all-important to the very survival of our nation.

If we ever should ascend to the condition of general war, or high intensity conflict, even the most important civilian traffic must take a back seat to the military C^3 requirements. At this point, survivability of military communications means becomes a matter of

grave national concern. Most civil matters can be handled under these conditions on an essentially local basis, with little requirement for worldwide strategic communications. Paradoxically, at a time when essential strategic military communications requirements will reach a peak, we are in danger of severe reduction of our capability as a result of enemy action.

Two other important factors are worthy of mention. Both are affected by the various conditions within the spectrum of conflict, but their consideration is basically an engineering matter. The military and certain civilian agencies have a requirement for security of communications; eventually and hopefully all C^3 will be secure. This is not true of the great bulk of governmental communications requirements. The other factor is known to communicators as "community of interest." Some agencies and groups have a substantial requirement for intercommunication, but others communicate with one another rarely, and, when they do, on a very low precedence basis. These factors, coupled with survivability, have a great impact on costs and must be carefully considered before systems design is begun.

Conclusion

It has been shown that events since World War II have shaped a hardware-oriented worldwide communications capability designed to meet the threat of the moment. It has been recognized at the highest levels of government that provision of an adequate system to meet the demands of the future requires amalgamation wherever possible,

with the ultimate evolution of a system which will meet governmental requirements worldwide. The great complexity of shaping the vast amounts of hardware already procured into such a system can not be overstated and presents the greatest single communications task ever conceived by man. In parallel with the expansion of our worldwide commitment has been an enormous technological revolution. Most senior communicators, both in and out of government, acknowledge that, with proper attention to the requirements and the state-of-the-art, and with recognition of the universality of all elements of information exchange, this task can be accomplished. Before notable progress along the lines of creation of a true NCS can be accomplished, there must be a critical examination of what our total requirements will be, what facilities we have today, how they can be adjusted to meet the requirements, and how we can resolve the interagency political problems with us today.

Careful consideration and/or resolution of the following factors will constitute a great start along the road to progress:

(a) Review and comparison of governmental requirements, military and civilian, to determine where they are and are not alike; this review must consider the dynamics of the spectrum of conflict.

(b) Careful integration of all elements of the information exchange chain, including functions associated with procedures, terminal equipment, transmission facilities, and the analysis, storage, and display of information.

(c) Elimination of parochial interagency political problems.

(d) Establishment of a government-wide educational program intended to instill in all personnel the knowledge of ways and means of achieving communications economy.

(e) Careful review of facilities to determine how existing facilities can best be utilized to meet the combined requirements.

With accomplishment of the foregoing, it will be possible to embark on a logical, comparatively uncomplicated, real-world approach to meeting the communications challenge of the future. Failure to address the real problems may well result in a less than satisfactory capability when the chips are down.

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